MEPS Compendium- Technical Notes

This data in this report were obtained in the first round of interviews for the Household Component (HC) of the Medical Expenditure Panel Survey (MEPS). MEPS is cosponsored by the Agency for Healthcare Research and Quality (AHRQ) and the National Center for Health Statistics (NCHS). The MEPS HC is a nationally representative survey of the U.S. civilian noninstitutionalized population that collects medical expenditure data at both the person and household levels. The focus of the MEPS HC is to collect detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to care, satisfaction with care, health insurance coverage, income, and employment. In other components of MEPS, data are collected on the use, charges, and payments reported by providers; residents of licensed or certified nursing homes; and the supply side of the health insurance market.

The sample for the MEPS HC was selected from respondents to the National Health Interview Survey (NHIS), which was conducted by NCHS. NHIS provides a nationally representative sample of the U.S. civilian noninstitutionalized population and reflects an oversampling of Hispanics and blacks. The MEPS HC collects data through an overlapping panel design. In this design, data are collected through a precontact interview that is followed by a series of five rounds of interviews over 2½ years. Two calendar years of medical expenditure and utilization data are collected from each household and captured using computer-assisted personal interviewing (CAPI). This series of data collection rounds is launched again each subsequent year on a new sample of households to provide overlapping panels of survey data which, when combined with other ongoing panels, will provide continuous and current estimates of health care expenditures.

Health Insurance

Derivation of Insurance Status Information

The household respondent was asked if during the interview period anyone in the family was covered by any of the sources of public and private health insurance coverage discussed in the following paragraphs. Coverage by Medicare and TRICARE, formally known as CHAMPUS/CHAMPVA, was measured at the time of the interview. (CHAMPUS and CHAMPVA were the Civilian Health and Medical Programs for the Uniformed Services and Veterans' Affairs.) All other sources of insurance were measured for any time between January 1st and the interview date. Persons counted as uninsured were uninsured throughout this time period. **Public Coverage** For this report, individuals were considered to have public coverage only if they met both of the following criteria:

- They were not covered by private insurance.
- They were covered by one of the public programs discussed below.

Medicare
Medicare is a federally financed health insurance plan for the elderly, persons receiving Social Security disability payments, and most persons with end-stage renal disease. Medicare Part A, which provides hospital insurance, is automatically given to those who are eligible for Social Security. Medicare Part B provides supplementary medical insurance that pays for medical expenses and can be purchased for a monthly premium.

TRICARE
TRICARE covers active-duty and retired members of the Uniformed Services and the spouses and children of active-duty, retired, and deceased members. Spouses and children of veterans who died from a service-connected disability, or who are permanently disabled and are not eligible for Medicare, are covered by TRICARE. In this report, TRICARE coverage is considered to be public coverage. When persons covered by TRICARE reach age 65, their coverage generally ends and enrollees are eligible for Medicare.

Medicaid and State Children's Health Insurance Program
Medicaid and the State Children's Health Insurance Program (SCHIP) are means-tested government programs jointly financed by Federal and State funds that provide health care to those who are eligible. Eligibility criteria vary significantly by State. Medicaid is designed to provide health insurance coverage to families and individuals who are unable to afford necessary medical care, while SCHIP is designed to provide health insurance coverage for uninsured low-income children. Respondents who did not report Medicaid or SCHIP coverage were asked if they were covered by any other public hospital/physician coverage. These questions were asked in an attempt to identify Medicaid or SCHIP recipients who might not have recognized their coverage as Medicaid or SCHIP. In this report, all coverage reported in this manner is considered public coverage.

Private Health Insurance

Private health insurance was defined as insurance that provides coverage for hospital and physician care (including Medigap coverage). Insurance that provides coverage for a single service only, such as dental or vision coverage, was not counted. Private health insurance could have been obtained through an employer, union, self-employed business, directly from an insurance company or a health maintenance organization (HMO), through a group or association, or from someone outside the household.

Uninsured

The uninsured were defined as persons not covered by Medicare, TRICARE, Medicaid, other public hospital/physician programs, or private hospital/physician insurance (including Medigap coverage) during the period from January 1st through the time of the interview. Individuals covered only by noncomprehensive State-specific programs (e.g., Maryland Kidney Disease Program) or private single-service plans (e.g., coverage for dental or vision care only, coverage for accidents or specific diseases) were not considered to be insured.

Health Insurance Edits

For the Round 1 sample, minimal editing was performed on sources of public coverage and no edits were performed on the private coverage variables. Health insurance data were edited as described below.

Medicare

Medicare coverage was edited for persons age 65 and over but not for persons under age 65. Persons age 65 and over were assigned Medicare coverage if they met one of the following criteria:

- They answered "yes" to a followup question on whether they had received Social Security benefits.
- They were covered by Medicaid, other public hospital/physician coverage, or Medigap coverage.
- Their spouse was age 65 or over and covered by Medicare.
- They were covered by TRICARE.

Medicaid

This report does not distinguish among sources of public insurance. Medicaid or other public hospital/physician coverage was included when considering whether an individual was covered only by public insurance.

TRICARE

Respondents age 65 and over who reported TRICARE coverage were instead classified as covered by Medicare.

Private Health Insurance

Private insurance coverage was unedited and unimputed for Round 1 (Panel 5). Individuals were considered to be covered by private insurance if the insurance provided coverage for hospital/physician care. Medigap plans were included. Individuals covered by single-service plans only (e.g., dental, vision, or drug plans) were not considered to be privately insured. Sources of insurance with missing information regarding the type of coverage were assumed to contain hospital/physician coverage.

MEPS Expenditures

Definition

Expenditures in this report refer to payments for health care services. More specifically, expenditures in MEPS are defined as the sum of direct payments for care provided during the year, including out-of-pocket payments and payments by private insurance, Medicaid, Medicare, and other sources. Payments for over-the-counter drugs, alternative care services, and phone contacts with medical providers are not included in MEPS total expenditure estimates. Indirect payments not related to specific medical events, such as Medicaid Disproportionate Share and Medicare Direct Medical Education subsidies, also are not included.

The definition of expenditures used in MEPS is somewhat different from the definition used in its predecessor surveys, the 1987 National Medical Expenditure Survey (NMES) and the 1977 National Medical Care Expenditure Survey (NMCES), where “charges” rather than “sum of payments” were used to measure expenditures. This change was adopted because charges became a less appropriate proxy for medical expenditures during the 1990s due to the increasingly common practice of discounting charges. One impact of this change is that charges associated with uncollected liability, bad debt, and charitable care (unless provided by a public clinic or hospital) are not counted as expenditures.

Estimation Methodology

Expenditure estimates in this report are based on the sum of total payments for medical events reported in during the calendar year. The HC collected annual data on the use of and associated expenditures for office and hospital-based care, home health care, dental services, prescribed medicines, vision aids, and other medical supplies and equipment. In addition, the MEPS Medical Provider Component (MPC) collected expenditure data from a sample of medical and pharmaceutical providers that provided care and medicines to sample people for that calendar year. Expenditure data collected in the MPC are generally regarded as more accurate than comparable data collected in the HC and were used to improve the overall quality of MEPS expenditure data in this report. For a more detailed description of the MPC, see Machlin and Taylor (2000).

Expenditure data were imputed to replace missing data, provide estimates for care delivered under capitated reimbursement arrangements, and adjust household-reported insurance payments because respondents were often unaware that their insurer paid a discounted amount to the provider. This section contains a general description of the approaches used for these three situations. A more detailed description of the editing and imputation procedures is provided in the documentation for the

MEPS event-level files, which are available through the AHRQ Web site at http://www.ahrq.gov/. For more information on the approach used to impute missing expenditure data on prescribed medicines, see Moeller, Stagnitti, Horan, et al. (2000).

Missing data on expenditures were imputed using a weighted sequential hot-deck procedure for most medical visits and services. In general, this procedure imputes data from events with complete information to events with missing information but similar characteristics. For each event type, selected predictor variables with known values (e.g., total charge; demographic characteristics; region; provider type; and characteristics of the event of care, such as whether it involved surgery) were used to form groups of donor events with known data on expenditures, as well as identical groups of recipient events with missing data. Within such groups, data were assigned from donors to recipients, taking into account the weights associated with the complex MEPS survey design. Only MPC data were used as donors for hospital-based events, while data from both the HC and MPC were used as donors for office-based physician visits.

Because payments for medical care provided under capitated reimbursement arrangements and through public clinics and Department of Veterans Affairs (VA) hospitals are not tied to particular medical events, expenditures for events covered under those types of arrangements and settings were also imputed. Events covered under capitated arrangements were imputed from events covered under managed care arrangements that were paid based on a discounted fee-for-service method, while imputations for visits to public clinics and VA hospitals were based on similar events that were paid on a fee-for-service basis. As for other events, selected predictor variables were used to form groups of donor and recipient events for the imputations.

An adjustment also was applied to some HC-reported expenditure data because an evaluation of matched HC/MPC data showed that respondents who reported that charges and payments were equal were often unaware that insurance payments for the care had been based on a discounted charge. To compensate for this systematic reporting error, a weighted sequential hot-deck imputation procedure was implemented to determine an adjustment factor for HC-reported insurance payments when charges and payments were reported to be equal. As for the other imputations, selected predictor variables were used to form groups of donor and recipient events for the imputation process.

In some situations, it was reported that one charge covered multiple contacts between a sample person and a medical provider (e.g., obstetrical services, orthodontia). The following example uses 1996 data to illustrate how this scenario was handled in the estimation process. Total payments for the fee (sometimes called a flat or global fee) were included if the initial service was provided in 1996. For example, all payments for an orthodontist's fee that covered multiple visits over 3 years were included if the initial visit occurred in 1996. However, if a 1996 visit to an orthodontist was part of a flat fee for which the initial visit occurred in 1995, then none of the payments for the flat fee were included. Most of the expenditures for medical care reported by MEPS participants were associated with medical events that were not part of a flat-fee arrangement.

Respondents sometimes reported medical events for which, in actuality, no payments were made. This situation could occur for several reasons, including when free care or a free sample of medicine was provided, bad debt was incurred, or no charge was made for a followup visit (e.g., after a surgical procedure). These types of events were treated as valid $0 payments when developing the estimates contained in this report.

Type-of-Service Categories

In addition to expenditures for total health services, expenses are classified in this report into eight broad types of service: hospital inpatient, emergency room , outpatient services, medical provider visits, prescribed medicines, dental, home health, and other medical equipment and services. These categories are described below and, where relevant, in the footnotes to the tables in this report.

Hospital inpatient services—This category includes room and board and all hospital diagnostic and laboratory expenses associated with the basic facility charge and payments for separately billed physician inpatient services.

Emergency Room services --- This category includes hospital diagnostic and laboratory expenses associated with the er facility charge and payments for separately billed inpatient services.

Outpatient services --- This category includes outpatient diagnostic and laboratory expenses associated with the basic facility charge and payments for separately billed inpatient services.

Medical provider visits --- This category covers expenses for visits to a medical provider seen in an office-based setting.

Prescribed medicines —This category includes expenses for all prescribed medications that were initially purchased or otherwise obtained during the calendar year, as well as any refills.

Dental services —This category covers expenses for any type of dental care provider, including general dentists, dental hygienists, dental technicians, dental surgeons, orthodontists, endodontists, and periodontists.

Home health services —This category includes expenses for care provided by home health agencies and independent home health providers. Agency providers accounted for most of the expenses in this category.

Other medical equipment and services —This category includes expenses for eyeglasses, contact lenses, ambulance services, orthopedic items, hearing devices, prostheses, bathroom aids, medical equipment, disposable supplies, and other miscellaneous items or services that were obtained, purchased, or rented during the year.

Source-of-Payment Categories

Estimates of sources of payment presented in this report represent the percentage of the total sum of expenditures paid for by each source. Sources of payment are classified as follows.

- Out of pocket by user or family.

- Private insurance—Includes payments made by insurance plans covering hospital and medical care (excluding payments from Medicare, Medicaid, and other public sources). Payments from Medigap plans or CHAMPUS and CHAMPVA (Armed-Forces-related coverage) are included. Payments from plans that provide coverage for a single service only, such as dental or vision coverage, are not included.

- Medicare—A federally financed health insurance plan for the elderly, persons receiving Social Security disability payments, and most persons with end-stage renal disease. Medicare Part A, which provides hospital insurance, is automatically given to those who are eligible for Social Security. Medicare Part B provides supplementary medical insurance that pays for medical expenses and can be purchased for a monthly premium.

- Medicaid—A means-tested government program jointly financed by Federal and State funds that provides health care to those who are eligible. Program eligibility criteria vary significantly by State, but the program is designed to provide health coverage to families and individuals who are unable to afford necessary medical care.

- Other public programs—Includes payments from the Department of Veterans Affairs (excluding CHAMPVA); other Federal sources (Indian Health Service, military treatment facilities, and other care

provided by the Federal Government); various State and Local sources (community and neighborhood clinics, State and local health departments, and State programs other than Medicaid); and Medicaid payments reported for people who were not enrolled in the Medicaid program at any time during the year.

- Other sources—Includes payments from Workers Compensation; other unclassified sources (automobile, homeowner's, or liability insurance, and other miscellaneous or unknown sources); and other private insurance (any type of private insurance payments reported for people without private health insurance coverage during the year as defined in MEPS).

Population Characteristics

Age

The respondent was asked to report the age of each family member as of the date of each interview for each round of data collection. In this report, age is usually based on the sample person's age as of the end of the year. If data were not collected during a round because the sample person was out of scope (e.g., deceased or institutionalized), then age at the time of the previous round was used.

Race/Ethnicity

Classification by race and ethnicity is based on information reported for each family member. Respondents were asked if the race of the sample person was best described as American Indian, Alaska Native, Asian or Pacific Islander, black, white, or other. They also were asked if the sample person's main national origin or ancestry was Puerto Rican; Cuban; Mexican, Mexicano, Mexican American, or Chicano; other Latin American; or other Spanish. All persons whose main national origin or ancestry was reported in one of these Hispanic groups, regardless of racial background, are classified as Hispanic. Since the Hispanic grouping can include black Hispanic, white Hispanic, and other Hispanic, the race categories of black, white, and other do not include Hispanic people.

Health Insurance Status

Individuals under age 65 were classified into the following three insurance categories based on household responses to health insurance status questions administered during each round of the MEPS HC.

- *Any private health insurance*—Individuals who, at any time during the year, had insurance that provides coverage for hospital and physician care (other than Medicare, Medicaid, or other public hospital/physician coverage) are classified as having private insurance. Coverage by CHAMPUS/CHAMPVA (Armed-Forces-related coverage) is also included as private health insurance. Insurance that provides coverage for a single service only, such as dental or vision coverage, is not included.

- *Public coverage only*—Individuals are considered to have public coverage only if they met both of the following criteria:

– They were not covered by private insurance at any time during the year.
– They were covered by one of the following public programs at any point during the year: Medicare, Medicaid, or other public hospital/physician coverage.

- *Uninsured*—The uninsured are defined as people not covered by Medicare, CHAMPUS/CHAMPVA, Medicaid, other public hospital/physician programs, or private hospital/physician insurance at any time during the entire year or period of eligibility for the survey. Individuals covered only by noncomprehensive State-specific programs (e.g., Maryland Kidney Disease Program, Colorado Child

Health Plan) or private single-service plans (e.g., coverage for dental or vision care only, coverage for accidents or specific diseases) are not considered to be insured.

Individuals age 65 and over were classified into the following three insurance categories:

- *Medicare only.*
- *Medicare and private.*
- *Medicare and other public.*

Poverty Status

Each sample person was classified according to the total annual income of his or her family. Within a household, all individuals related by blood, marriage, or adoption were considered to be a family. Personal income from all family members was summed to create family income. Possible sources of income included annual earnings from wages, salaries, bonuses, tips, and commissions; business and farm gains and losses; unemployment and Worker's Compensation; interest and dividends; alimony, child support, and other private cash transfers; private pensions, individual retirement account (IRA) withdrawals, Social Security, and Department of Veterans Affairs payments; Supplemental Security Income and cash welfare payments from public assistance, Aid to Families with Dependent Children and Aid to Dependent Children; gains or losses from estates, trusts, partnerships, S corporations, rent, and royalties; and a small amount of "other" income.

Poverty status is the ratio of family income to the corresponding Federal poverty thresholds, which control for family size and age of the head of family. Categories are defined as follows:

- *Poor*—This refers to persons in families with income less than or equal to the poverty line and includes those who reported negative income.
- *Near-poor*—This group includes persons in families with income over the poverty line through 125 percent of the poverty line.
- *Low income*—This category includes persons in families with income over 125 percent through 200 percent of the poverty line.
- *Middle income*—This category includes persons in families with income over 200 percent through 400 percent of the poverty line.
- *High income*—This category includes persons in families with income over 400 percent of the poverty line.

Region

Each MEPS sample person was classified as living in one of the following four regions as defined by the Bureau of the Census:

- *Northeast*—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.
- *Midwest*—Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

- *South*—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

- *West*—Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii.

Place of Residence

Individuals were identified as residing either inside or outside a metropolitan statistical area (MSA) as designated by the U.S. Office of Management and Budget (OMB), which applied 1990 standards using population counts from the 1990 U.S. census. An MSA is a large population nucleus combined with adjacent communities that have a high degree of economic and social integration within the nucleus. Each MSA has one or more central counties containing the area's main population concentration. In New England, metropolitan areas consist of cities and towns rather than whole counties. Regions of residence are in accordance with the U.S. Bureau of the Census definition.

Perceived Health Status

The MEPS respondent was asked to rate the health of each person in the family at the time of the Round 1/3 and Round 2/4 interviews according to the following categories: excellent, very good, good, fair, and poor. Perceived health status in this report is based primarily on responses obtained in the Round 2/4 interview. For persons with missing health status in a round, the response for health status at the previous round was used, if available. In the tables in this report, the five health status categories are the following : (1) excellent, (2) very good, (3)good health and (4) fair and (5)poor health.

Employment Status

Persons were considered to be employed if they were age 16 and over, and had a job for pay, owned a business, or worked without pay in a family business at the time of the Round 1/3 interview.

Sample Design and Accuracy of Estimates

MEPS is designed to produce estimates at the national and regional level over time for the civilian noninstitutionalized population of the United States and some subpopulations of interest. Each MEPS panel collects data covering a 2-year period, with the first five MEPS panels spanning 1996-97, 1997-98, 1999-2000, and 2000- 2001. The data in this Compendium are from the first round of data collection for the each of the MEPS Panels. The statistics presented in this report are affected by both sampling error and sources of nonsampling error, which include nonresponse bias, respondent reporting errors, interviewer effects, and data processing misspecifications. For a detailed description of the MEPS survey design, the adopted sample design, and methods used to minimize sources of nonsampling error, see Cohen (1997) and Cohen, Monheit, Beauregard, et al. (1996). The MEPS person-level estimation weights include nonresponse adjustments and poststratification adjustments to population estimates derived from the March Current Population Survey (CPS) based on cross-classifications by region, MSA status, age, race/ethnicity, and sex. Note that the 2000 Health Insurance tables used the March 2000 CPS; the 1999 Health Insurance tables used the March 1999 CPS etc.

Tests of statistical significance were used to determine whether the differences between populations exist at specified levels of confidence or whether they occurred by chance. Differences were tested using Z-scores having asymptotic normal properties at the 0.05 level of significance. Unless otherwise noted, only statistical differences between estimates are discussed in the text.

Rounding

Estimates presented in the tables were rounded to the nearest 0.1 percent. Standard errors, presented in accompanying Tables A-D, were rounded to the nearest 0.01, while for Table E they were rounded to the nearest whole number. Mean and median expenditures are rounded to the nearest dollar. Total

expenditures are rounded to the nearest million dollar unit. Population estimates in Tables 1-5 were rounded to the nearest thousand. Therefore, some of the estimates presented in the tables for population totals of subgroups will not add exactly to the overall estimated population total.

Comparisons with Other Data Sources

Differences Between MEPS and CPS

Because of methodological differences, caution should be used when comparing these data with data from other sources. For example, CPS measures persons who are uninsured for a full year; NHIS measures persons who lack insurance at a given point in time—the month before the interview. The CPS interview that contains information on the health insurance status of the population is conducted annually, and NHIS collects insurance data on a continuous basis each year. In addition, unlike MEPS, CPS counts as insured military veterans whose source of health care is the Department of Veterans Affairs. CPS also counts children of adults covered by Medicaid as insured. For these preliminary estimates, MEPS did not consider these children insured unless their families reported them as such.

Differences Between MEPS and National Health Accounts Estimates

MEPS and the National Health Accounts (NHA) of the Health Care Financing Administration (HCFA) have substantial differences in methodologies and objectives. In particular, the NHA are based on a composite of data from multiple sources at the national level and are used primarily to track aggregate medical expenditures in the U.S. economy. In contrast, MEPS collects survey data on individuals that can be used to estimate direct payments made for medical care and services purchased by the civilian noninstitutionalized population. Data from MEPS are widely used for behavioral and socioeconomic analyses of the relationship between individual characteristics and health care spending.

National health care expenditure estimates from MEPS are lower than those from the NHA for several reasons. First, the NHA include a larger range of expenditures. For example, the NHA include expenditures for over-the-counter drugs, nursing home care, program administration, government public health activities, and construction, as well as some hospital and physician revenues not associated with patient care. Second, the NHA include health care expenditures for individuals who are not members of the civilian noninstitutionalized population, such as individuals in the military and those residing in nursing homes, assisted living facilities, and prisons. Researchers at AHRQ and HCFA estimate that adjustments for differences in the scope of included expenditures and population reduce the NHA's 1996 national estimate to about $604 billion, compared to the corresponding 1996 MEPS national estimate of $554 billion (Selden, Levit, Cohen, et al., 2000). For the most part, the remaining difference is likely to reflect some combination of (a) irreconcilable definition and measurement differences between the NHA and MEPS and (b) statistical uncertainty associated with sampling error in both MEPS and the NHA.

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